

Interactive comment on “Needle age-related and seasonal photosynthetic capacity variation is negligible for modelling yearly gas exchange of a temperate Scots pine forest” by M. Op de Beeck et al.

M. Op de Beeck et al.

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We would like to thank the referee for the thorough review of our manuscript and for her/his constructive and helpful critique. Below are given our answers (A) to the referee's comments (C). We copied the comments and answered each comment separately.

C: This is a very interesting and enlightening analysis on the sensitivity of a process-based model's predictions of gross ecosystem productivity in a Scots pine stand. In

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addition, variation in key photosynthetic parameters due to needle age and seasonality are presented. The authors do a good job of presenting their results as well as emphasizing the importance of their results and putting them into context. The only limitation of the analysis is that it presents only one year of observations or simulations. However, I still believe the manuscript should be published with only minor revisions.

Specific:

C: P9738, L16: Always helpful to give a quantitative value with a qualitative statement. By what % were Vm25 and Jm25 higher?

A: Done. We included the observed percentage-wise differences in Vm25 and Jm25 between current-year and one-year-old needles.

C: P9738, L20: replace “odd” with “unexpected”

A: Done.

C: P9738, L21: Again, what was the range in overestimation in terms of %?

A: About 15%. We included the percentage-wise overestimation of GPP by the model in the sentence

C: P9739, L7: I would suggest adding “For example,” prior to “Needles are unevenly. . .”

A: Done.

C: P9739, L13: I suggest revising sentence: “. . . is typically met as their framework allows or a detailed. . .”

A: Done.

C: P9739, L16-19: Be more helpful to give the citations associated with “needle age-related” and “seasonal photosynthetic capacity” rather than lumping the citations at the end of the sentence.

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A: Done.

C: P9739, L26: Be helpful to give this statement some context. For example, you could mention that both Raulier et al. and Ogee et al. looked at the influence of needle-age with differing results.

A: Done. We inserted citations relevant to the statement we make.

C: P9742, L14: change to "least squares method"

A: Done.

C: P9751, L12: change to "percentage-wise"

A: Done.

C: P9752, L6: "reasons" to "reason"

A: Done.

C: Figure 2: Add a legend to the figure to explain the grey and white bars.

A: Done.

Sincerely, M. Op de Beeck

Interactive comment on Biogeosciences Discuss., 6, 9737, 2009.